



European Beech “Summit” at Longwood Gardens

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Mike Leventry and the rest of the IPM staff at Longwood Gardens hosted a small gathering of tree care professionals who were concerned about European beech health on April 5. The audience heard from “experts” Chuan Hong (*Phytophthora* biology, Virginia Tech), Brian Kunkel (entomology, University Delaware), George Hudler (bleeding cankers, Cornell), and John Ball (abiotic stresses, South Dakota State). Mike wrapped things up with an overview of the Longwood beech management program. The gathering provided a forum for much give and take between the audience and the speakers, and programs like this—initiated by tree care practitioners like you—are likely to become the best opportunities for sharing new ideas in the future. In this case, some take home messages were:

(1). *Phytophthora* species

Phytophthora species seem to be ubiquitous in soils of north temperate climates. The organisms seem to survive quite well as decayers of organic matter *without* causing disease and often become pathogens when trees are predisposed.

(2). Ambrosia beetles

Ambrosia beetles complicate efforts to keep beech trees (and a lot of other hardwoods, as well) healthy, but the evidence that they only attack stressed trees is pretty compelling. “Stress” is obviously loosely defined, but one consequence of stress is that trees emit ethyl alcohol vapors that attract the beetles. What appears to be an upswing in ambrosia beetle activity in recent years may simply be a normal population “bubble” and all monitoring that is being done is NOT turning up any new species. Also there is no evidence (yet?) to suggest that ambrosia beetles are moving *Phytophthora* around.

(3). Bleeding cankers

Bleeding cankers caused by species of *Phytophthora* continue to pose a problem for tree care professionals and evidence from Cornell scientists suggests (as mentioned above) that the cankers are occurring on trees that are either stressed by old age (and all the stuff that goes with that ... like compacted soil, depleted nutrients, etc.), transplant shock or other unintended stress. Phosphorus acid as a bark drench and/or as a soil drench *seems* to be keeping growth

of the cankers in check and remains the recommended treatment. Once-per-year applications ought to be sufficient but practitioners should know that cankers don’t just “dry up” immediately after treatment. That may take several months. In the meantime, though, we are reasonably confident that the cankers are not getting larger beneath the bark.

(4). Abiotic stress

Some things that we don’t necessarily think about with regard to “abiotic stress” include the extraordinary changes that occur when trees are relocated from forests to landscapes. In the case of beech, the dramatic growth of lateral branches with accompanying masses of foliage—features that make the trees landscape treasures—put an incredible demand on the trees for added water and nutrients. As leaves are removed every fall and the trees are left to compete with turf, the consequences of that alone can take its toll over time. Dr. Ball covered a host of other topics related to stress, concluding that as the trees are left to deal with the added consequences of old age on top of some other abuses, intentional or otherwise, predisposition to insect and disease is inevitable.

Mike Leventry and other members of the Longwood staff concluded with a review of their beech management program which includes judicious watering, respect for the root systems, and Agri-Fos treatments as needed. One inexplicable observation by the Longwood staff is that every first canker (of what might become several) on a tree is on the south side. No one had a good explanation for that, but the data were pretty consistent. Another observation was that the root collars of the trees varied from smooth bark to some that was roughened and cracked. The question at hand was whether or not this represented variability in the quality of the graft and if so, whether something less than a “complete” graft could provide added stress. We reviewed our extensive collection of canker trees on return to Ithaca but didn’t see anything that lead to a convincing conclusion one way or the other.

At the end of the day, participants were glad that they had taken the time to attend and agreed that more meetings like this to exchange ideas on just one or a few topics, with plenty of time for discussion, were definitely worthwhile.

Bleeding Cankers on Beech

